

MISS ELEANOR A. ORMEROD.

UNIVERSAL regret will be felt at the death of almost our only prominent lady entomologist, and our best authority on farm and garden entomology. Miss Ormerod was born at Sedbury, in Gloucestershire, and breathed her last on July 19, 1901, in her seventy-fourth year, at Torrington House, St. Albans, where she resided for some years with her sister, Miss Georgiana Elizabeth Ormerod, who died in 1896 at the age of seventy-three.

At the time when Miss Eleanor Ormerod turned her attention to injurious insects, no popular English work existed on the subject; for Curtis's "Farm Insects" was too large and costly for wide circulation. We do not know if Mr. E. A. Fitch, who had been projecting a work on the subject himself, suggested it to Miss Ormerod, or whether the initiative came from her; but in 1877 appeared the first part of the well-known "Notes of Observations of Injurious Insects," by E. A. Ormerod, T. A. Preston and E. A. Fitch. About this time Mr. Fitch found that pressure of business prevented him from giving much attention to entomology; but for twenty-three years afterwards appeared annual reports, under the editorship of Miss E. A. Ormerod, embodying the observations of a great number of observers on those species of insects which had been most destructive, or which had attracted special attention during each year. From time to time she published detached observations in different journals on subjects of much importance connected with her favourite subject, supplementary or preliminary to her reports, and she also published several books which had a wide circulation, and some of which went through several editions. Among the most important of her separate works are the following:—"A Manual of Injurious Insects, with Methods of Prevention and Remedy for their Attacks to Food Crops, Forest Trees and Fruit, and with short Introduction to Entomology" (first edition, 1881); "Guide to Methods of Insect Life, and Prevention and Remedy of Insect Ravage" (1884); republished in 1892 under the title of "A Text-book of Agricultural Entomology"; "Notes and Descriptions of a few Injurious Farm and Fruit Insects of South Africa, compiled by E. A. Ormerod, F.R.Met.Soc., &c., with Descriptions and Identifications of the Insects by Oliver E. Janson" (1889); and "A Handbook of Insects injurious to Orchard and Bush Fruits, with Means of Prevention and Remedy" (1898).

Miss E. A. Ormerod was assisted in her work by her sister Georgiana, who was likewise an ardent entomologist, though we are not aware that she ever published anything under her own name. Both the sisters were Fellows of the Entomological Society of London, having joined in 1878 and 1880 respectively, and at one period they were regular attendants at the meetings. For some years Miss E. A. Ormerod held the appointment of consulting entomologist to the Royal Agricultural Society. She was also an examiner in agricultural entomology to the University of Edinburgh; and in 1900 that body conferred upon her the honorary degree of D.C.L.

W. F. K.

NOTES.

THE French Minister of War has asked the Paris Academy of Sciences to give an opinion as to the possibility of danger arising from the establishment of wireless telegraphy stations in the neighbourhood of magazines containing powder or other explosives. It is suggested that the nature of the cases containing the explosive may be an important matter for consideration in connection with the subject.

THREE prizes have been offered to the Marine Biological Association of the West of Scotland by Sir John Murray, K.C.B., in memory of the late Mr. Fred. P. Pullar, who was associated with him in the bathymetrical survey of the Scottish fresh water lochs, and lost his life on Airthrey Loch, Bridge of Allan, in February last. There will be a prize of 50*l.* for a paper on each of the following subjects:—(1) The seasonal distribution and development of pelagic algæ in the waters of the Clyde sea area. (2) The reproduction, development and distribution in the Clyde sea area of the genera *Nyctiphanes* and *Boreophausia*. (3) The formation and distribution of glauconite in the deposits of the Clyde sea area and the adjacent seas of Scotland. These prizes are open to investigators from any part of the world who conduct observations in the several subjects at the Millport Marine Station, and who produce, at any time before January 1, 1905, papers which, in the opinion of a committee of three scientific men, to be nominated by the committee of the Association and by Sir John Murray, shall be deemed of sufficient value to merit publication. The honorary secretary of the Association is Mr. John A. Todd, 190, West George Street, Glasgow.

THE annual meeting of the British Medical Association was opened at Cheltenham on Tuesday, when Dr. C. B. Ferguson, the president, delivered an address on "Scientific Research as the Indispensable Basis of all Medical and Material Progress." In the course of his remarks, Dr. Ferguson said that medical progress owed more to the biologists and to the men of pure science than to the so-called practical men. The cell theory, for instance, originated entirely with the biologists. It led up to bacteriology, the most imposing and the most impressive department of medical biology. Bacteriology itself now rested on cultivation and staining; and if year by year more and more of the germs of disease were recognised, it was because of the improved methods of colouring and making them visible. All this strengthened his contention that the basis of modern medicine was essentially scientific. Then in surgery the discovery of the Röntgen rays had been of priceless benefit, but most certainly Röntgen was thinking of nothing less than of surgery when he made that discovery. Antitoxins, which are among the most valuable resources of remedial art, medical men owed to strictly scientific investigators. Personally, he placed much faith in the anti-typhoid inoculations of Prof. Wright, of Netley, and in the anti-tetanus serum, and he felt sure that many more equally effective means would soon be available. Dr. Ferguson next recalled the splendid work—purely scientific again—of the French and Italian investigators of malaria, together with Major Ronald Ross, Dr. Manson, and other English observers, by whom the mosquito theory had been worked out. Turning to ophthalmology, he asked what would have been its state to-day without the invention of the ophthalmoscope by the physicist Helmholtz. Then there was the marvelously successful treatment of lupus by the chemical rays of the electric arc devised by Finsen, of Copenhagen. And where would medical men be without the chemists, who had provided iodine, bromine, iodoform, chloroform, chloral and cocaine? As the result of several visits to the continental capitals he had been struck with the thoroughness and scientific spirit everywhere there manifested, very different from the anti-scientific spirit characterising most of the wealthier and more cultivated classes in this country. France, Germany and the United States educated at their Universities approximately one student in every 1500 of the population, but we were content with less than one in 2000. Yet the matter was one of life or death for the country, for more and more every year the victory and the predominance would pass to the possessors of the latest knowledge, the deepest science and the most perfect and economical processes.

THE Harben medal of the Royal Institute of Public Health was presented to Prof. Koch at the annual dinner of the Institute on July 24. The medal is awarded in recognition of services rendered to the public health, and is conferred irrespective of nationality. In presenting the medal, the president of the Institute, Prof. W. R. Smith, described Prof. Koch's career of scientific activity. In reply, Prof. Koch remarked that when, as a young doctor, he went to take up his practice at Wallstein he found himself in a country where anthrax was to be seen on every hand, and he was naturally led to make the matter one of research. In that research he was greatly assisted by the perfection to which the microscope had been brought, and this gave the key to the wider discoveries in bacteriology that followed. He was gratified to receive the medal as a testimony of their concurrence with the scientific methods which he had followed, and he was all the more pleased to have such an honour from an English institute, because it was in England that his researches in reference to anthrax and the treatment of wounds met with the first appreciation.

PROF. W. A. HERDMAN has received letters and natural history notes from Mr. Nelson Annandale and Mr. H. Robinson, who left Liverpool University College a short time ago for a year's exploration in the Siamese Malay States. Some of the observations made and material collected will be described at the forthcoming meeting of the British Association at Glasgow. Meanwhile, it is interesting to read the following notes from the naturalists:—"We have obtained what is either a second species of *Periophthalmus* or a genus closely allied to it, and we have to-day ourselves collected a series of young specimens, which show that in extreme youth the eyes are normally placed on the sides of the head, and only migrate to the top later in life. We also got in water less than a fathom a most interesting case of commensalism, in which a small crab, with a very soft back, has the two last pairs of legs specially modified for holding on to a sea-anemone, which it grasps by the foot. . . . A good many cases of mimicry between different orders and families, principally between spiders and ants, homoptera and beetles, were noted—in at least ten cases the mimicked animal being an ant."

THE programme of the seventy-third meeting of German Men of Science and Physicians, to be held at Hamburg on September 22-28, has been issued. As there are eleven sections dealing with different departments of natural philosophy, and twenty-seven sections in the group of medical sciences, it is easy for all who are engaged in scientific work to find a section in which they are particularly interested. The general science sections are:—(1) mathematics, astronomy and geodesy; (2) physics, including instrument making and scientific photography; (3) mixed mathematics and physics (electrotechnics and scientific engineering); (4) chemistry, including electrochemistry; (5) general chemistry, including agricultural chemistry and food investigations; (6) geophysics, including meteorology and terrestrial magnetism; (7) geography, hydrography and cartography; (8) mineralogy and geology; (9) botany; (10) zoology; and (11) anthropology and ethnology. On September 23 and 27 there will be general meetings at which lectures will be given. On the former date the lectures to be delivered will be on Hertz electric waves and their further development, by Dr. E. Lecher; the chemical possessions of the cell, by Dr. F. Hofmeister; and the problem of fertilisation, by Prof. T. Boveri. On September 27 the lectures will be on medicine and maritime intercourse, by Prof. H. Curschmann; the significance of electrical methods and theories in chemistry, by Prof. W. Nernst; and on the natural energy of organisms, by Prof. J. Reinke. There will be a joint meeting on September 25 for the discussion on atoms, from the point of view of recent investigations and conclusions on ions and electrons. The presi-

dent of the meeting is Prof. R. Hertwig, of Munich. Prof. van 't Hoff is the president of the group of natural philosophy sections, and Prof. Naunyn the president of the sections of medical sciences.

THE presidential address delivered by Mr. G. C. Druce at Dublin on Tuesday, at the opening meeting of the British Pharmaceutical Conference, was a survey of the important scientific discoveries made during last century, and their relation to the art and practice of pharmacy. In pharmaceutical chemistry, the active principles which have been isolated are now appalling in number, and have assisted in making great changes in the character of dispensing. In addition, a stream of artificial compounds, many of which possess marked therapeutic action, has flowed from the laboratory of the chemist. Referring to botany and systems of classification, Mr. Druce said: "One marked change has taken place during the past century so far as the professional teaching of botany is concerned, for in the early years of last century all the important botanical chairs in Britain were held by systematists, now not a single one is so occupied. This is not an unalloyed advantage. That systematic botany alone should be taught to the almost absolute neglect of histology or physiology was doubtless an evil, and it has been said that taxonomic teaching was choked by its own nomenclature; but the whirligig of time brings its revenges, and now we may without injustice retort that laboratory botany is being strangled by the exuberance of its terminology. And the positive evil exists that with the neglect of systematic teaching in Britain our continental and transatlantic *confidres* are occupying the ground in which Britain for long held a foremost position, and which, from the extent of our colonial possessions, should be especially its own."

DR. CARL PETERS has returned to London, after an extended journey from the Zambesi to the Sabi rivers, and has brought home news of interesting archaeological discoveries on the frontier of Mashonaland. One of these is a small female figure of Egyptian workmanship, which is believed to date back to 2500 years before the Christian era. There have also been found thirty-three copper and six silver coins and a couple of stones bearing inscriptions. It is hoped that a scientific expedition will be sent out to make further investigations.

WE learn from the U.S. *Monthly Weather Review* that the German South Polar Expedition will systematically make kite ascensions in the trade winds from aboard ship during the southward journey, and continue the work in the Antarctic regions. The expedition is fully equipped with suitable apparatus, all substantially of the Weather Bureau pattern, and the scheme will be that followed at Washington, with modifications required by the conditions and resulting from extensive experiments at the Deutsche Seewarte. The kites are of three sizes, the large Marvin of 6½ square metres surface, Hargrave kites of 4 and 2½ square metres surface and light Eddy kites of 2½ square metres, which are very advantageously employed in lifting and sustaining the larger kites with the instruments in light winds. This appears to be the first occasion on which preparations have been made for the systematic exploration of the upper air conditions in the polar regions.

AFTER a protracted spell of dry weather, London was visited by a violent thunderstorm about noon on July 25. The weather chart issued by the Meteorological Office on that day showed that a shallow depression lay over the south-eastern parts of England, and this moved very slowly to the westward during the next few days. Except that the conditions were very unsettled there was nothing to indicate the occurrence of a storm of unusual violence. The rainfall was of great intensity, amounting to nearly an inch and three-quarters in about an hour

and a half, and to three inches within forty-eight hours. In some parts of the metropolis much damage was caused by flooding, and railway traffic was suspended for a considerable time. As late as Sunday last this same shallow storm area was still lingering over the southern portion of the country, the centre being in the morning in the south-west. Heavy thunderstorms were still occurring in those parts which lay near the path of the disturbance. On Saturday there was again exceptionally heavy rain in parts of London, an inch falling in less than an hour in the southern suburbs. The midland districts of England have experienced very heavy rains, the fall at Oxford amounting to 4.33 inches in the four days ending last Sunday morning.

WE have received from Dr. W. Doberck, director of the Hong Kong Observatory, a copy of the observations made there during the year 1900. The work contains, in the same form as in previous years, a very valuable series of hourly meteorological observations and mean results deduced from them, as well as magnetical and astronomical data. In addition to the usual work of a well-equipped observatory, much attention is given to various researches, including the collection of observations at about forty land stations and from ships' logs, with the view of contributing to our knowledge of the climatology of the Far East and of the destructive typhoons of the eastern seas. The total number of days' observations collected from different ships during the year amounted to nearly 20,000; these are regularly entered in degree squares for the construction of trustworthy pilot charts. Weather forecasts are also issued daily about 11 h. a.m., and a comparison with subsequent weather shows that the amount of total or partial success reached the high figure of 93 per cent. during the year in question.

THE Meteorological Office Pilot Chart of the North Atlantic and Mediterranean for the month of August shows that there has been a very decided increase in the quantity of ice in the neighbourhood of Newfoundland, the reports, which are as late as July 3, being too numerous to admit of all being given on the chart. The bergs crowd mostly from Cape Race eastward to the Flemish Cap, but there are a good many scattered about down to 42° N., 49° W. and 43° N., 43° W. In the notes on the winds, further information is given relating to West Indian hurricanes, some of which, there is reason to believe, originate in the neighbourhood of the Cape Verde Islands, where the prevailing winds for August exhibit a cyclonic circulation. To the mean path of these hurricanes is added an indication of the southern and the eastern and northern limits within which they have been experienced in this month, the South American coast westward to Honduras being practically free from actual hurricanes, but experiencing very disturbed seas, occasioned by the distant gales. In Trinidad, the hurricane months are marked by violent squalls and heavy rain. The region of ordinary gales has commenced to work southward after having nearly disappeared northward in July. After steadily extending eastward from the American coast until the Bay of Biscay was reached in July, the fog area has suddenly shrunk, the main area being now to the westward of the 30th meridian, only a small patch being shown off the English Channel; but it is stated that while there is this diminution off our south-western coasts there is an increase in progress up the east coast of Britain and about the Clyde and Irish Sea. Other notes deal with the salient features of the ocean currents; with British thunderstorms which form locally; and with the winds of the Sea of Marmara, and currents of this sea and the Dardanelles and the Bosphorus.

THE Report of the Council issued in the *Proceedings* of the South London Entomological and Natural History Society for 1900 discloses a satisfactory state of the roll of members and of the finances of that energetic body. The average attendance

NO. 1657, VOL. 64]

at the meetings has been about 30, which is remarkably good for a society whose members number only 170. Mr. R. Adkin communicates an interesting article on the life-history of the goat-moth, in which it is shown that the change from caterpillar to chrysalis does not take place in the stems of the living willows tunnelled by the former, but rather in dead trunks or any other situation where soft, friable matter is to be met with.

A VIEW of M. Fagel's statue of Chevreul, unveiled at Paris on July 11, is given here by the courtesy of the *Chemist and Druggist*. The monument stands in the Cour d'Honneur of the Paris Museum of Natural History, and is an excellent representation of the eminent chemist, whose investigations have greatly assisted in promoting the commercial prosperity of France. The base of the statue bears inscriptions recording the principal events of Chevreul's life, the front one being as follows:—"Chevreul, Michel-Eugène, né à Angers le 31 aout 1786; mort à Paris le 7 Avril 1889. Professeur de Chimie



Statue of Chevreul.

Organique, 1830-1889; Directeur du Muséum d'Histoire Naturelle, 1863-1884." Upon the occasion of the unveiling of the statue, M. E. Perrier, the present director of the Paris Museum of Natural History, delivered an address which is given in full in the *Revue Scientifique* of July 20, with discourses by M. A. Gautier, who represented the Academy of Sciences, and M. Arnaud, who succeeded Chevreul in the chair of organic chemistry at the Museum in 1890.

THE latest issue of *Notes* from the Leyden Museum contains an article by Dr. F. A. Jentink on the collection of antelopes in that institution, in the course of which the author pays a tribute to the value of the "Book of Antelopes," by Messrs. Sclater and Thomas. The Leyden collection appears to be very rich in antelope skins from the Cape, many of these belonging to species which are at least locally extinct. The author believes the white-tailed gnu to be quite extinct as a wild species,

and the same is true for the eland in Cape Colony. The head of a female of the latter with an abnormal form of horn is figured. In the same journal Dr. Finsch continues his catalogue of the Leyden bird collection, dealing in this section with the bee-eaters.

ANOTHER ruminant—the Louisianian representative of the white-tailed deer—receives a new name in the June number of the *American Naturalist*. Recently some American writers announced that the proper specific name of the Virginian white-tail was *americanus*, instead of the time-honoured *virginianus*, and the former name has consequently been generally adopted in literature. Others say they were wrong in the change, and propose to revert to *virginianus*. Nothing can be more unsatisfactory than such perpetual changes, and it is far better to adhere to one name, even if it be not what is called the right one. To the same journal Dr. R. W. Shufeldt contributes a paper on the affinities of the American birds commonly known as screamers (Palamedææ). While admitting their affinity with the duck tribe, he suggests that they may be the survivors of the common ancestral type of both the anserine and the gallinaceous birds. In all their characters these birds are archaic, and the author is of opinion that they serve to connect the duck tribe with the ostrich group.

In launching a new periodical, the *Museums Journal*, of which the first number is dated July, the Museums Association has full justification, and the venture has our best wishes. It is edited by Mr. E. Howarth, of Sheffield, with the cooperation of other museum officials from England, Germany, the United States, Australia, the Cape and New Zealand; and by this wide basis any danger of cliquism gaining a predominance in the new journal should be obviated, while it will ensure attention to the needs of museums in all parts of the world. Following the introductory notice is an address on the museums of Edinburgh by Sir William Turner, the president of the Museums Association, whose portrait forms the frontispiece to this issue. Next comes a specimen museum label, to be followed by others month by month. This label, which deals with British pottery, is, in our opinion, too long and too verbose. In order to avoid wearying museum visitors, it should clearly be divided into two—the first descriptive and the second dealing exclusively with the various British potteries. The part closes with a series of general notes, of which one section is devoted to home and the other to foreign museums.

SOME interesting conclusions have been arrived at by Dr. Ford, of the McGill University, Montreal, in the course of his investigations on the bacteriology of the healthy organs of animals. The liver and kidneys of a number of rabbits, guinea-pigs, cats and dogs were examined, and at least eighty per cent. were found by Dr. Ford to contain bacteria. This is contrary to the results obtained earlier by Neisser and Opitz, who in similar examinations found no bacteria. This apparent discrepancy in the two series of investigations is explained by Ford as due to Neisser and Opitz only cultivating the organs examined by them for two, at most three, days, whereas it is necessary, Ford states, to leave them for several days, a week, and even two weeks to obtain the development of the bacteria present. Each animal, regardless of its species, showed its distinct bacteriology, and as a rule the Carnivora—dogs and cats—exhibited bacteria similar to each other, but absolutely different from those obtained from the Herbivora—rabbits and guinea-pigs. These results are quite consistent with the difference in the food used by the animals, which would determine to a large extent the intestinal flora. Dr. Ford's paper is published in the *Transactions of the Association of American Physicians*.

The *Revue générale des Sciences* for June 30 and July 15 contains an article by Dr. Cureau on the geography of equatorial

Africa. The subject is well treated in its most general aspects, and a number of interesting sections, particularly of the Nile-Congo region, are given. The second article deals with the population.

THE new number of the *Mitteilungen aus den deutschen Schutzgebieten* contains two important series of determinations of heights in Togoland. Dr. A. Lübbert contributes a paper on native treatment and medicines in German South-west Africa, and a report on the system of land surveying employed in Cape Colony and its application in modified form to German South-west Africa. From German East Africa Captain Prüssing writes on the Rufiyi delta, and Dr. Kandt on Ruanada. Dr. Pflüger contributes some notes on the geology of the Bismarck Archipelago.

The *Zeitschrift* of the Berlin Gesellschaft für Erdkunde contains an important report by Dr. von Oppenheim on his journey in Asiatic Turkey during 1899. The region traversed is of special interest in relation to the proposed railway from Constantinople to Bagdad, and the paper discusses the best available route for such a railway, and the prospects of its financial success. Dr. W. Brennecke gives, in the same number of the *Zeitschrift*, the results of Prof. Philippson's determinations of heights in the neighbourhood of Pergama.

In *Petermann's Mitteilungen*, M. Gentil-Tippenhauer continues his papers on the geology of Haiti. The present instalment deals with the mineral deposits of Terre-Neuve and Gonaives. Prof. Supan contributes a paper, read at the recent Geograph-entag at Breslau, on the climate of the Antarctic, in which he discusses the results of recent observations as establishing the existence of a permanent polar anticyclone, surrounded by a ring of low pressure. Dr. Franz Schaffer gives an account of studies in the geotectonics of south-eastern Anatolia, made during journeys in the spring and autumn of 1900.

THOSE of our readers who are interested in the Farthest East should consult the *Mittheilungen der deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens* (Tokyo, also at Asher and Co., Berlin). In vol. viii. part 2 of that journal will be found an account of the existing and proposed state and private railways in Japan, by Inspector F. Baltzer. The ancient national bon-festival is described by Dr. H. Weipert and illustrated by nine plates drawn by Japanese, which present existing and former aspects of certain ceremonies and dances connected with the festival. The bon-dance has been handed down from the mythical period, and the primitive Ainos have a very similar dance. The Rev. A. Lloyd has a paper, in German, on dogmatic anthropology in Buddhism. Prof. Aoyama writes on the plague. The number concludes with a short communication by Prof. Dr. E. Bälz on the racial elements in Eastern Asia, especially in Japan. He characterises (1) the Mongolo-Malayan type; (2) the Korean-Mandschurian type; (3) the Aino type. The latter are, according to Bälz, the remains of a "Caucasian or Caucasoid race" that was widely scattered throughout the whole of the north of Asia.

THE current volume (vol. iii.) of the *Bulletin of the Free Museum of Science and Art of the University of Pennsylvania* has several interesting articles, mainly on collections that have been presented to the Museum. We have previously directed attention to this Museum, which has greatly prospered under the curatorship of Mr. Stewart Culin, and is rapidly becoming an important centre of research and instruction. A copiously illustrated account is given by Mr. Culin of a summer trip among the Western Indians, being a narrative of the Wanamaker Expedition. In addition to much interesting information gained on this trip, large numbers of specimens were obtained, many of which were of objects the use of which has all but died out. Pendant-shaped stones with a groove encircling one end are

constantly found in America in graves and elsewhere. These are popularly called "plummets." The so-called "plummets" form the subject of an illustrated paper by Charles Peabody, who enumerates the numerous uses to which these stones have been supposed to be put. Of these supposititious uses that as true plummets is the most unlikely; probably most were sinkers used in fishing and some were weights used in weaving, while others were probably used for various purposes. The indefatigable travellers, Dr. H. M. Hiller and Dr. W. H. Furness, 3rd, give an illustrated paper on the Veddahs of Ceylon, but there is nothing particularly new in their observations. The games of the Ogalala Indians are fully described by Mr. Louis L. Meeker; these Amerinds are a branch of the Sioux, and the specimens he collected further enrich the unique collection of toys and games that Mr. Culin has been the means of garnering in the Museum under his care.

AMONG the series of useful French handbooks published under the title of *Scientia*, there are few that will prove of greater interest to mathematicians and physicists than M. J. Hadamard's volume of 102 pages on Taylor's series and its extension. The general problem of Taylor's series consists in the determination of an analytical function by the solution of the following problems: (1) calculation of the function at any point whatever; (2) determination of the singular points. M. Hadamard considers that the solution of the first problem is to be found in Mittag Leffler's theorem, but that of the second is at present in a much less advanced stage. In the bibliography, the author gives a list of more than a hundred books and papers dealing with the properties of analytic functions, the convergence of series and other questions arising out of the general problem.

In the *Psychological Review* (viii. 2), Prof. G. T. W. Patrick studies the questions, "Why do men swear? When they swear, why do they use the words which they do?" From a classification of the various forms of profane expression used by men at different periods of history, and an examination of their connection with religious words, the writer concludes that profanity is not to be regarded as primarily an expression of emotion, but is only to be understood by the genetic method, the point of departure being the growl of anger in the lower animal, which is a serviceable form of reaction in cases of combat. It belongs, therefore, to a primitive form of vocalisation, and hence is ancient and deep-seated, being one of several forms of speech preceding articulate language by an indefinite period of time. By a process of selection it chooses at all times those forms of phonation or those articulate words which are best adapted to terrify or shock the opponent. Although originally useful in combat, the occasion of profanity at the present time may be any analogous situation in which our well-being is threatened, as in helpless distress or disappointment. If, then, the oath is a form of instinctive reaction and even a purifying agent, why is it considered to have an immoral quality? Prof. Patrick thinks for two reasons: first, because advancing civilisation bids us evermore inhibit and repress; and, secondly, because of the unfortunate but inevitable connection between profanity and the sacred names of religion.

AN account of the new eruptive cone on Vesuvius, which commenced to form in September, 1900, up till April last, is given by Prof. E. Semmola in the *Rendiconto* of the Naples Academy (vii. 4). The cone is—or rather was at that time—about forty metres high, but difficult of ascent owing to its steepness and the thick coating of sand on its walls. The internal cavity was irregularly elliptic and was divided along its major axis into two parts. In that part lying towards the north-east a crater had been formed whose depth did not appear to exceed twenty-five metres; at its bottom was the eruptive aperture emitting a copious column of vapour and gas. In the smaller

portion was a crateriform dyke, full of cracks, and with the walls smoking in places, this being separated from the crater previously mentioned by a kind of wall rising half-way up and terminating in the floor of the crater. The internal walls of the crater were carpeted with sublimates, in which various shades of red and yellow predominated. The vapour made its exit in globular clouds, which in calm weather spread out into a fine tree-shape some hundred metres high. The gaseous products reddened litmus paper, and here and there sulphurous anhydride was noticeable; the ground at the top of the cone felt hot, and the temperature at a depth of 50 cm. was about 50° C. Reflected light was not seen at night, and Prof. Semmola hence concludes that the source of activity was at a considerable depth. The general character of the phenomena, and in particular the entire absence of explosions or ashes or projected bodies, points to the activity of Vesuvius being considerable, but the channels of activity being altogether free from any obstructions such as would cause violent action to take place.

MR. RAVENSHAW's paper on the electrical transmission of power in coal mines, and Mr. Walker's on electrical miners' safety lamps, which appear in the last number of the *Journal* of the Institution of Electrical Engineers, contain, with the joint discussion on the two papers, a great deal of valuable information on this comparatively recent application of electricity. The number of purposes to which electricity can be applied, either to supply an existing want or to replace some less satisfactory method, is continually increasing, and as each new problem is attacked special difficulties present themselves. This is very apparent in this instance, where the dangers peculiar to coal-mining make it essential for the electrician to design special machinery to meet the case. Mr. Walker's paper is very instructive as showing how many difficulties have to be overcome before a lamp can be obtained to compete at all successfully with the existing miner's lamp, although at first sight the electric lamp would seem to be so preeminently the best one to use. Thus, apart from questions of cost and weight, the very safety of the electrical lamp is in itself a drawback, since it does not indicate, as does an oil lamp, the presence of dangerous gases. There can be little doubt, however, that the difficulties have only to be fully realised to be successfully overcome, and in the course of time the use of electricity is likely to become general in coal-mines, for which in essential respects it is so peculiarly suitable.

A FEW more details concerning the adoption of the "Parsons steam turbine" as a source of propulsion in the mercantile marine are now available. The vessel named the *King Edward*, the main dimensions of which have been given in a previous number, has been launched and (says *Engineering* of July 5) has so far quite realised the expectations of her owners. The trials were run on the Firth of Clyde, where, on a mean of runs "over the Skelmorlie mile," the speed of 20.48 knots was obtained. The mean revolutions were registered at 740 per minute, boiler pressure 150 lbs. per sq. inch, a vacuum of 26½ inches, and a stokehole pressure (forced draught) equivalent to one inch of water. Among the advantages of the Parsons steam turbine over the ordinary reciprocating engines the following are mentioned:—(1) The weight of the propelling machinery is 66 tons, being, it is stated, roughly half the weight for an engine (of the same power) employed in a paddle steamer of the same type. (2) On account of the lightness of the turbine machinery, very graceful lines have been introduced into the "model" of the hull, both fore and aft, which otherwise could not have been used. (3) The small amount of room taken up by the turbine machinery. All the machinery is placed below the "main" deck, giving the space above otherwise occupied with engines to additional passenger accommodation. (4) The total absence of noise from the turbines when running. In fact it is stated that it is not possible to tell whether they are running

or not; by placing one's hand on them the only slight vibration discernible is right aft, and is due to the propellers. (5) The low centre of gravity of the turbine machinery has given good stability in the *King Edward* without either a "hard bilge or long floor," rendering this class of machinery conducive to high speeds. During the trials *Rothsay* was "made" as an experiment, and the vessel behaved splendidly, coming to easily and quickly—an important point in passenger excursion traffic, for which the steamer is intended. The *King Edward* is now on her run in Scotland, and is by far the fastest boat of her class.

WE have received from Messrs. Baker and Co., of Newark, U.S.A., an illustrated catalogue of platinum apparatus for use in large and small college chemical operations. The illustrations show a variety of useful contrivances for laboratory purposes, and the catalogue concludes with some valuable observations on the use and care of platinum, on the cleaning of platinum wire, and with some tables which will much assist in calculating the weight, and therefore the price, of platinum apparatus.

THE popular science lectures for young people, which have been given at the Kensington Town Hall during the autumn and winter, will be continued in October next. The aim is to interest juveniles in various aspects of scientific study and encourage them to view natural objects and phenomena in a sympathetic frame of mind. The subjects of lectures arranged for the autumn are secrets in sands, by Mr. C. Carus-Wilson; waves of sound and waves of light, by the Rev. J. O. Bevan; colour and colour photography, by Dr. A. H. Fison; flowers and their insect visitors, by Prof. J. B. Farmer, F.R.S.; and secrets in flint pebbles, by Mr. C. Carus-Wilson.

MR. EDWARD STANFORD has published a South Polar chart which will be of service in following the progress of the expeditions about to sail for Antarctic regions. The chart indicates, by contours and eight shades of blue, the ocean depths, so far as they are known, down to 5000 fathoms and below. Lines are also engraved on the chart to show the approximate limit of the pack ice during the southern summer months, the line of freezing-point in air in January and February, the northern limit of icebergs, and the tracks of the *Challenger*, *Valdivia* and *Belgica* expeditions. It is a little to be regretted that the proposed tracks of the expeditions about to start are not also included, so that the fields of operations of the German and British expeditions could be easily distinguished.

THE paper by Prof. S. P. Langley and Mr. F. W. Very, "On the Cheapest Form of Light," which appeared in the *American Journal of Science* in August, 1890, has been reprinted and published as No. 1258 of the Smithsonian Miscellaneous Collections, with a note pointing out some of the additions to our knowledge of the light from living and mineral sources during the last ten years. It will be remembered that the paper deals with the light of the fire-fly and shows that the insect produces light without heat, so that its efficiency as a light source is far higher than any artificial means of illumination. In connection with this subject, the luminous bacteria cultivated by Mr. J. E. Barnard and Prof. Allan Macfadyen, and shown at the last Royal Society conversazione (see p. 57) are of interest.

THE additions to the Zoological Society's Gardens during the past week include a Vervet Monkey (*Ceropithecus lalandii*) from South Africa, presented by Mr. Crandon W. Gill; an Alpine Marmot (*Arctomys marmotta*), European, presented by Mrs. Curtis; a Rough-keeled Snake (*Dasypeltis scabra*), four Rhomb-marked Snakes (*Trimerorhinus rhombeatus*, four Rufescent Snakes (*Leptodira hotamboeia*), three Crossed Snakes (*Psammodphis crucifer*), a Coppery Snake (*Prosymna sundevalli*), a Delalande's Lizard (*Nucras delalandii*) from South Africa, presented by Mr. A. W. Guthrie; two Pond Herons (*Ardeola*

grayi), a Cattle Egret (*Bubulcus coromandus*), a White-bellied Drongo (*Dicrurus coerulescens*), a Common Hawk Cuckoo (*Hierococcyx varius*), two Baya Weaver-birds (*Ploceus baya*), two Scarlet-backed Flower-peckers (*Dicoeum cruentatum*), two Purple-rumped Sun-birds (*Arachnechthra zeylonica*), a Himalayan Black Bulbul (*Hypsipetes psaroides*) from British India, presented by Mr. E. W. Harper; two European Pond Tortoises (*Emys orbicularis*), European, presented by the Hon. Mrs. Fitzgerald; an Algerian Tortoise (*Testudo ibera*) from North Africa, three South Albemarle Tortoises (*Testudo vicina*), two Central Albemarle Tortoises (*Testudo*, sp. inc.) from the Galapagos, deposited; two Herring Gulls (*Larus argentatus*), bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN AUGUST.

- August 2. 2h. Mercury at greatest elongation, $10^{\circ} 23'$ West.
 4. 14h. 39m. to 15h. 47m. Moon occults δ Piscium (mag. 4.6).
 6. 12h. 16m. Minimum of Algol (β Persei).
 9. 9h. 5m. Minimum of Algol (β Persei).
 11. Maximum of Perseid meteoric display (radian $45^{\circ} + 57^{\circ}$).
 13. Saturn. Outer minor axis of outer ring = $17''.94$.
 15. Venus. Illuminated portion of disc = 0.873 , or Mars = 0.915 .
 15. 7h. 21m. to 10h. 26m. Transit of Jupiter's Sat. III. (Ganymede).
 17. 6h. 12m. to 8h. 32m. Transit of Jupiter's Sat. IV. (Callisto).
 25. 6h. Saturn in conjunction with the moon. Saturn $3^{\circ} 42'$ S.
 28. 12h. 54m. to 13h. 59m. Moon occults ϵ' Capricorni (mag. 5.2).
 29. 12h. 29m. to 13h. 29m. Moon occults κ Aquarii (mag. 5.5).
 29. 10h. 47. Minimum of Algol (β Persei).

THE PARIS OBSERVATORY IN 1900.—A Paris correspondent sends us the following note:—The annual report drawn up by M. Maurice Lœwy, director of the Paris Observatory, and adopted by the Observatory Council, has been sent to the National Printing Office for publication. The international mapping of stars not being in operation in three different parts of the southern hemisphere, M. Lœwy, president of the committee, has sent representations to these countries, through diplomatic agencies, with the result that work will soon begin in them. Mr. Thome, director of the National Observatory, Cordoba, has written to M. Lœwy that the Argentine Republic has authorised him to organise an astrophysical service. Mr. Cooke, director of the Perth Observatory in Southern Australia, has been notified by the Colonial Office that a special grant will be at his disposal for the future budget. M. Enrique Legrand, of the Uruguay Republic, has persuaded H.E. M. Cuertas to present a bill for the establishing of an astrophysical service in Montevideo. The work is progressing favourably in all the countries where it has been inaugurated.

M. Lœwy is investigating Prof. Turner's method of determining, from photographs, the positions of the celestial bodies with almost the same exactness as from direct observations in the sky. The report gives for the first time a complete list of the fifty-eight observatories which have taken part in the Eros international observations. According to the last news included in the report, January 6, no single night had passed, since the inauguration of this work, without at least one observatory having made at least one Eros observation. On favourable nights the number of observations exceeded one hundred. MM. Prosper Henry and Boinot took 104 series of photographs of the planet Eros from October 3 to January 6.

Six hundred and seventy stars at a distance of not more than one degree from the path followed by Eros were observed with the meridian circle. For the first time observations of stars were registered on the meridian with a special chronograph invented by the Abbé Verschaffel. Ten sheets, containing 16,500 stars, of the photographic catalogue of the heavens, have been published. Each of these sheets contains a zone of one degree in declination